

## PATENT APPLICATION

### OPTICAL PROBES AND PROBE SYSTEMS FOR MONITORING FLUID FLOW IN A WELL

#### Inventors:

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#### Priority Information:

U. S. Provisional Patent Application,  
Serial No. 60/263,531

#### Assignee:

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**Schlumberger****Via Express Mail EV 060666618 US**

January 23, 2002

Assistant Commissioner for Patents  
Box: NEW PATENT APPLICATION  
Washington, D. C. 20231

Re: New Patent Application of:  
Xu Wu; Elizabeth B. Dussan V; and Oliver C. Mullins  
Entitled, "OPTICAL PROBES AND PROBE SYSTEMS FOR  
MONITORING FLUID FLOW IN A WELL"  
Our Reference No.: 60.1377/SDR-067

Sir,

Enclosed for filing in the U.S. Patent and Trademark Office is the above-identified new patent application, which includes 13 pages of text, 4 pages of claims (1-25), Abstract, 2 sheets of drawings (Figs 1-5b), and an unexecuted Declaration.

The filing fee is calculated as follows:

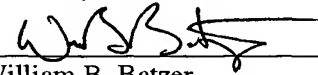
Basic Filing Fee	\$ 740.00
Total Claims = <u>25</u>	
Excess over 20 = <u>5</u> X \$18.00	90.00
Independent Claims = <u>6</u>	
Excess over 3 = <u>3</u> X \$84.00	252.00
<b>Total Fees</b>	<b>\$1,082.00</b>

It is respectfully requested that a filing date bearing today's date be assigned to this application in accordance with 37 CFR §§1.10, and 37 CFR §§1.53, which permits Express Mail filing and late filing of the Oath or Declaration, respectively.

The Commissioner is hereby authorized to charge **Deposit Account N°. 19-0615** in the amount of **\$1,082.00** to cover the above-calculated fees and any other filing fees that may be required under 37 C.F.R. §1.16. Should this amount be incorrect, the Commissioner is hereby authorized to charge or credit any deficiency or overpayment to **Deposit Account N°. 19-0615**. Two copies of this transmittal letter are enclosed for PTO accounting use.

Respectfully submitted,

By

  
William B. Batzer

Registration No. 37,088

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of ) Batch No.:  
)  
**Xu WU et al.** )  
) Group Art Unit:  
Serial N°: To Be Assigned )  
)  
Filed: January 23, 2002 ) Examiner:  
)  
For: OPTICAL PROBES AND PROBE SYSTEMS )  
FOR MONITORING FLUID FLOW IN A WELL ) Docket No.: 60.1377/SDR-067

**EXPRESS MAIL CERTIFICATE  
UNDER 37 CFR §1.10**

ASSISTANT COMMISSIONER FOR PATENTS  
Washington, D. C. 20231

Attention: NEW PATENT APPLICATION

Sir:

**Express Mail Label Number: EV 060666618 US**  
**Date of Deposit: January 23, 2002**

I hereby certify that the attached paper(s) are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D. C. 20231.

(Signature)  
(Print Name)

Tony Costa  
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OPTICAL PROBES AND PROBE SYSTEMS FOR  
MONITORING FLUID FLOW IN A WELL

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This application claims priority from provisional patent application Serial No. 60/263,531 filed Jan. 23, 2001.

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This application is related to co-owned U.S. Patent #5,831,743 entitled "Optical Probes", U.S. Patent #5,956,132 entitled "Method and Apparatus for Optically Discriminating Between the Phases of a Three-Phase Fluid", U.S. Patent #6,016,191 entitled "Apparatus and Tool Using Tracers and Single Point Optical Probes for Measuring Characteristics of Fluid Flow in a Hydrocarbon Well and Methods of Processing Resulting Signals", U.S. Patent #6,023,340 entitled "Single Point Optical Probe for Measuring Three-Phase Characteristics of Fluid Flow in a Hydrocarbon Well", and U.S. Patent #6,075,611 entitled "Methods and Apparatus Utilizing a Derivative of a Fluorescence Signal for Measuring the Characteristics of a Multiphase Fluid Flow in a Hydrocarbon Well", all of which are hereby incorporated by reference herein in their entireties.

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This application is also related to co-owned, concurrently filed U.S. Serial No. 10/---,--- entitled "Apparatus and Methods for Determining Velocity of Oil in a Flow Stream" (Docket #60.1442) and U.S. Serial No. 10/---,--- entitled "Downhole Fluorescence Detection Apparatus" (Docket 21.0918) both of which are hereby incorporated by reference herein in their entireties.

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